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ABSTRACT

Those of us who are committed to the pedagogical enterprise are called upon to re-examine, clarify, and perhaps justify the presuppositions, methods, and goals that provide the framework within which education and development are carried on. Recent publications by several writers have reintroduced notions that demand critical examination, particularly with reference to the processes of education, schooling, and upward mobility of people of low status in our society. These works have been the basis of recent attempts to use educational and behavioral science data to support the assertion that schooling can make little difference in the efforts of low-status people to achieve equality or a fair chance at survival. Two primary lines or argument have been advanced: (1) it is asserted that some ethnic groups or races are genetically inferior to others and thus are incapable of benefiting from schooling to the same extent as are the others. Among the scholars whose work has been used to support this position are Eysenk, Herrnstein, Jensen, and Shockley; and (2) it is asserted that schools make little difference and are not effective forces in changing the life chances of the pupils who pass through them. Among the scholars whose works have been used to support this position are Coleman and Jencks. What is more important than how these scholars feel and what may be their motives is what the media try to tell us about the meaning of this work and what the society decides to do about the problems at which their work is directed. (Author/JM)

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An Affluent Society's Excuses for Inequality: Developmental, Economic, and Educational

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SPECIAL REVIEW

An Affluent Society's Excuses for Inequality: Developmental, Economic, and Educational

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Those of us who are committed to the pedagogical enterprise note with interest, and often frustration, the recurring themes that challenge the conduct and advancement of our undertaking. Unlike the historian or sociologist, who might view these themes with interest but with some detachment, we are called upon to re-examine, clarify, and perhaps justify the presuppositions, methods, and goals that provide the framework within which education and development are carried on. Indeed this perhaps is as it should be, in view of the ambivalence with which these concerns are treated by a society that, on the one hand appears to value the perceived outcomes of the educational process, while on the other is often reluctant to invest the resources necessary to improve it, particularly when benefits seem likely to accrue to those who are on the lower end of the ethnic and socio-economic status scales.

Recent publications by several writers have reintroduced notions that demand critical examination, particularly with reference to the processes of education, schooling, and upward mobility of people of low status in our society. These works have been the basis of recent attempts to use educational and behavioral science data to support the assertion that schooling can make little difference in the efforts of low-status people—Blacks, Chicanos, Native Americans, Puerto Ricans, and poverty stricken whites—to achieve equality or a fair chance at survival. Two primary lines of argument have been advanced:

1. It is asserted that some ethnic groups or races are genetically inferior to others and thus are incapable of benefiting from schooling to the same extent as are others. Among the scholars whose work has been used to support this position are Eysenk, Herrnstein, Jensen, and Shockley.

2. It is asserted that schools make little difference and are not effective forces in changing the life chances of the pupils who pass through them. Among the scholars whose work has been used to support this position are Coleman and Jencks.

In the debate that has emerged around these two issues, considerable energy has been directed at attacking the individuals whose work has been used, and some have even objected to the scientific study of the questions as being immoral or politically

This essay, invited by the Editors for publication in the Journal, reviews recent work by Theodosius Dobzhansky, Hans Eysenck, Richard Herrnstein, Christopher Jencks, and Arthur Jensen. Publications reviewed within this essay are indicated by an asterisk in the list of references at the end.

dangerous. I want to disassociate myself from any of the arguments directed at limiting free research inquiry and serious discussion of the issues. I believe that the pursuit of knowledge and discussion must be uncensored, and I shall not use this platform to join the argument concerning the individuals or their motives. However, there are differences among these scholars, and some can be clearly identified as more democratic and humane in their convictions than others. What is more important than how these scholars feel and what may be their motives is what the media try to tell us about the meaning of this work and what the society decides to do about the problems at which their work is directed.

It should be of particular significance to readers of this Journal that those scholarly or not so scholarly pronouncements that support the racist convictions prevalent in the society get a better press than those that do not. Statements and findings that support our preference not to spend money on the poor or to help low-status minorities are given prominence, while findings that could lend support to more humanistic developmental interventions somehow seem to be ignored.

For example, when Jensen's work was being published by the Harvard Educational Review and picked up by the press all across this country, there were already major works on the subject that had been ignored. About a year and a half prior to the attention given Jensen's speculations, Margaret Mead and several equally distinguished scholars published, through the Columbia University Press, the proceedings of the American Association for the Advancement of Science Symposium on Science and the Concept Race. Neither the minority press or the so-called liberal white press ran major stories on that contribution to scientific understanding. Could that work have been ignored because it did not come to the popular conclusion that blacks are genetically inferior to whites? And why was that work not highlighted when the press picked up Jensen's work, even if Jensen was not a meticulous enough scholar to have included it and similar works in his own review of existing research on the subject?

In 1972, Arthur R. Jensen's book, *Genetics and Education* [12] was published both by Methuen in London and Harper & Row in the United States. It is the first of a series of three volumes, the second of which has recently become available,[13] with a third volume to be published shortly. In *Genetics and Education,* the author has collected a series of articles together with a preface that chronicles the events that led up to the writing and publication in the Harvard Educational Review of the article, "How Much Can We Boost IQ and Scholastic Achievement," and also documents the reactions, both academic and political, that its publication provoked. This article, with some minor corrections, forms the basis and perhaps *raison d'etre* of the book.

The republication of this article in book form indicates to some degree the importance it has assumed, and will serve to broaden the audience already reached through the Harvard Educational Review publication. These factors—together with the continuing debate it has fostered, and the subsequent contributions of other scholars, which seem to lend support to Jensen's views—make further discussion appropriate and necessary.

Jensen, from an examination of the evidence for the success of compensatory education programs for the disadvantaged, concludes that such programs have failed, the measure of their failure being the extent to which they have been able to boost for any appreciable length of time the IQs of the participating students. From this examination he goes on to theorize that the reason for the ineffectiveness of such programs lies in the total environmentalist approach to the problem of IQ differences. Jensen advocates that we examine the possibility of the genetic determination of such differences, and offers evidence from a number of studies to support the view that a large portion of IQ variability, perhaps as much as 80%, can be accounted for by genetic factors. From this line of argument, the author suggests that the differences consistently found between groups (*e.g.*, the fifteen point difference between the mean IQ of whites and the mean IQ of

blacks) may in fact be genetically based and that attempts to decrease these differences may necessitate the employment of biological techniques rather than those of psychology or education.

Differences in IQ scores between social or ethnic groups may indicate different patterns of ability, and Jensen has, from his own researches, identified two levels of learning that appear to be differentially associated with class differences among children. Level I ability (learning through association) is found more frequently among low-SES children (including most members of certain ethnic minorities), while children from high-SES families (largely white) are endowed with Level II ability, which permits learning through conceptualization and is highly correlated with IQ.

Jensen discusses the educational implications of this theory and indicates possible teaching strategies and educational emphases that take these into consideration. Among his recommendations are the following:

1. Educators should teach skills directly to Level I learners, rather than attempt to increase overall cognitive development.

2. IQ tests should be deemphasized as a method for determining instructional outcomes.

3. Research in education should be aimed toward the discovery and implementation of teaching methods based on a knowledge of the pattern of functional ability which specific student groups possess.

The logic of these arguments for the customizing of learning experiences has been largely ignored in the responses to Jensen's claim that the patterns themselves are genetically determined. When that debate has been adequately dealt with, if not resolved, the problems involved in matching individual learning patterns to individually prescribed learning experiences will still confront us. Hopefully these problems will not have to wait for the nature-nurture controversy to be settled.

In the second of Jensen's three volume set, *Educability and Group Differences*, he repeats the earlier theses and presents a more detailed account of the issues and evidence concerning "race differences in intelligence." Without retreating from his earlier conclusions, Jensen treats the issues with greater precision, and in his elaborations leaves considerably less room for distortions or exaggerated misapplications of his position. His central thesis as reflected in this work is that individuals and groups differ along a number of physical and behavioral dimensions, including intellectual ability and mental function. After review of most of the relevant research, he is convinced that environmental and genetic factors are involved in the average disparity between blacks and whites in the United States on measures of intelligence and educability. Of that disparity, represented by a mean score for blacks that is about fifteen points lower than the mean score for whites, between 50% and 75% of the difference appears to be best accounted for by genetic factors, with the remainder attributed to environmental factors and their interaction with the genetic differences.

This latest work reflects the seriousness with which Jensen has approached the positions of some of his critics. Except for the more polemical arguments advanced against him, he addresses most of the issues around which his position has been challenged. He discusses issues related to within and between group heritability, equating for socioeconomic variables, motivation, culture-biased tests, teacher expectancy, environmental inequalities, health and nutrition, intelligence of "racial hybrids," and other issues. His treatment of these issues is variable but this is unimportant since they bear only tangential relations to the central issue. In a sense, it is unfortunate that concern with ethnic differences in the quality of intellectual function has claimed so much of Jensen's attention as well as that of the public. For although the author makes much of the consistent findings of difference and the weight of available evidence on the side of genetic explanations, when it comes to what we are to do for groups, and particularly for individuals, good educational programming, wholesome and purposeful developmental conditions, greater diversity of curricula and goals, and greater attention to the

needs of individual learners are indicated. These are Jensen's recommendations. They are also the hallmark of effective pedagogy. But Jensen is concerned with more. He believes that to generate effective educational treatments we must first generate better knowledge of the mechanicisms of effective learning. He sees the disparity in intellectual function and educational achievement between blacks and whites as a major national problem to which simple notions of equalizing educational opportunity are insufficient. He sees his work in support of concepts of group and individual differences (genetically based) as providing the impetus for greater attention being given to diversity of educational opportunity. To the extent that such diversity is not seen as placing (or is not utilized to place) arbitrary limits on the options available to learners because of ethnic group or social class from which they come, the concept can provide a progressive force in education.

On the whole, Eysenck's *Race, Intelligence and Education* [6] can be taken as a more simply written version of Jensen's work. However, Eysenck deals much more adequately with the concept of race, and places the hereditarian view in a more scientific perspective. It is advanced as one of two major hypotheses put forward to account for certain observed conditions, and as the one that he believes the "facts" favor at the present time. He goes beyond Jensen's earlier work in providing substantial evidence to support his position, nevertheless continually cautioning his readers that hypotheses are not proofs. This concern for relating the issues at hand to the ways of science is one of the distinctive features of the work. Eysenck pays particular attention to the process of theorizing and the elimination of rival hypotheses, arguing quite soundly that those critics who maintain that circumstantial evidence is insufficient to support an hereditarian hypothesis regarding IQ differences, fail to acknowledge that this is consonant with the way in which science operates. Disparate pieces of evidence that can be assimilated into a particular theoretical framework do in fact lend support to it. This is especially true where competing hypotheses cannot adequately account for the evidence.

Eysenck challenges critics of this position to "account" for the fact that when whites and Negroes are matched on education, socioeconomic status, and living area, differences are only slightly reduced as far as IQ is concerned: or the even more damaging fact that higher-class Negroes, when compared with lower-class whites, are still inferior in IQ. In posing this question, he obviously does not deal with the argument that matching for education, SES, and living area in racist societies does not result in groups exposed to similar or equal conditions of life. Nor does he fail to avoid repeating the error that Jensen and most investigators have made when they have neglected to control for intergenerational effects of economic, ethnic, and social status.

In a second general theme, Eysenck deals with the practical application of scientific discoveries to educational practice. Effective programs, Eysenck argues, can be implemented only when relevant facts are known, and this can be accomplished only through unfettered and adequately supported research programs. In response to the expressed belief that if IQ is largely a matter of genes then all programs of education aimed at those with low abilities are inevitably doomed to failure, the author points to the oft cited example of phenylketonuria and indicates how a knowledge of the mechanism through which genetic action affects a condition can lead to effective environmental control. Thus he argues that an understanding of the way in which intelligence may be influenced by heredity is a prime requisite for any educational program geared toward helping individuals with low IQs.

Whereas Jensen emphasizes the importance of functional patterns, Eysenck speaks primarily to the importance of high IQ for education, especially higher education. Maintaining that the abilities associated with high intelligence are essential for higher academic success, he considers it unreasonable for any racial group to disregard the importance of IQ as a prere-

quisite to academic attainment. On this issue he states:

> It makes no sense to reject the very notion of such abilities as being important . . . and at the same time demand access to institutions closely geared to the view that such abilities are absolutely fundamental to successful study . . . any lowering of standards of admittance with respect to IQ would demonstrably lead to a disasterous lowering of standards of competence. . .

For this reason as well as others, policies aimed at providing proportionate racial representation in colleges and universities without regard for IQ are in his view misguided.

Although virtually all the evidence presented relating racial differences to IQ differences is drawn from studies involving black samples, Eysenck emphasizes that the issue is not simply one of black versus white. He points out that the tested intelligence of the Irish population is quite similar to that of the black American population. (Interestingly the author suggests some possible mechanisms through which these "deficient" populations might have emerged as non-random selections from a larger group. It is conjectured that selective migration of high IQ members of the Irish population may have left a gene pool for low IQ in the home country, while he claims it may have been Africans of low intellectual ability who were shipped as slaves. Eysenck also presents an argument similar to that advanced by informed students of Afro-American history, which holds that if the alleged low quality of inherited aspects of intellectual function are the culpable agents in the performance of blacks in the United States, it may be a function of genocide practiced against the most able and rebellious slaves rather than the capture of the less able.) Speaking again to the necessity for dealing with the issue in a non-racial fashion Eysenck writes:

> . . . even if there were no Negroes or other minority groups in a country, there would still be bright and dull children, and the problems posed by their existence would be equally great, although the emotion invested would perhaps be less.

William Shockley,[19] Professor of Engineering Science at Stanford University, has asked us to consider, as "thinking exercise," the possibility of eugenic control to limit the production of such individuals through a voluntary, remunerated sterilization program. Shockley, basing his arguments on the same data that Jensen used to determine the heritability of IQ arrives at the same conclusions, namely that IQ has a heritability of 80% and also that the average IQ difference between black and white populations in the United States is genetic in origin. This, together with the fact that those members of the population who are most deficient in IQ tend also to be more prolific breeders than those more well endowed genetically, raises the specter in Shockley's mind of a "down breeding" of the total population in intellectual ability. His fears for the continuation of society if this dysgenic trend is allowed to continue, are expressed in the following:

> With the advent of nuclear weapons, man has in effect reached the point of no return in the necessity to continue his intellectual evolution. Unless his collective mental ability can enable him reliably to predict consequences of his actions, it is possible that he may provoke his own extinction. . .

Shockley leaves no doubt as to the source from which the main threat arises. For although, in theory, any voluntary sterilization program would include the genetically inferior of any race or class, he writes:

> Nature has color-coded groups of individuals so that statistically reliable predictions of their adaptability to intellectually rewarding and effective lives can easily be made and profitably be used by the pragmatic man in the street.

The criticisms of Jensen's position have come from a number of sources and have emphasized different aspects of his argument. The most general criticism comes from those who see in Jensen's work the recurring attempt to deal with the "nature-nurture" problem, which some see as a futile exercise based on a naive conception of the interplay between genetic and environmental factors in behavior.

Birch,[2] although writing in a context not directly related to the debate ensuing from Jensen's work, highlights this problem. (Indeed Birch's article antedates Jensen's and forms part of a collection of papers edited by Margaret Mead and others. This book represents the end products of a symposium held under the auspices of the American Association for the Advancement of Science to examine the concept of race as it is elucidated by scientific study.) Thus Birch argues that the nature-nurture controversy stems primarily from a confusion between the concepts "genetic" and "determined," and that while all aspects of an organism may be thought to be 100% genetic, they are not 100% determined. Phenotypic expression is the result of a continuous biochemical and physiological interaction of gene complex, cytoplasm, internal milieu, and external environment throughout the life span of the organism. In as much as IQ is a phenotypic characteristic it is virtually meaningless to attempt to determine the relative proportions of environmental and genetic influences that contribute to its expression.

Theodosius Dobzhansky,[4] the eminent geneticist, has leveled criticism at several aspects of Jensen's thesis. Two of these bases for disagreement will be examined, first the limitations of the genetic-IQ studies used to support the heritability estimates, and secondly the limitations of the concept of "heritability" itself. The data on which the determination of the heritability of IQ is based are derived from studies that compare the IQs of identical twins reared together and apart (this provides the most direct evidence on which the effects of environments are determined, since monozygous twins have identical genes). Other more indirect evidence is supplied by studies of fraternal twins, comparison of the IQs of adopted children with those of their biological and adoptive parents, and the relationship between the IQs of various generations within a family group. Dobzhansky indicates that, with respect to these studies, they predominantly concern Caucasian, middle-class samples, thus making questionable their applicability to other populations. Furthermore, "neither the twins nor siblings reared apart, nor the adopted children have been exposed to the full range of environments which occur in the societies in which they live." In effect, then, a true sampling of the effects of the environment has not been obtained. Dobzhansky emphasizes the several postulates concerning heritability:

1. Heritability is a property of a population and not an intrinsic property of a trait, in this instance, intelligence.

2. Heritability depends upon the extent to which genetic and environmental factors are uniform or heterogeneous.

3. The estimation of heritability between different populations is much more complex than that within populations.

4. Differences found in the average IQ scores between races and social classes, need not be genetically conditioned to the same extent as are the individual differences within groups.

On this last point Jensen is firmly criticized for invalidly using the heritability of IQ differences that are found within a particular population, and are thereby limited by the specific conditions prevailing in that population, to measure the heritability of population means.

Other scholars have similarly addressed themselves to the problems of the determination of heritability and its limited applicability. Hirsch [10] writes:

> Such measurement naturally requires a perfectly balanced experimental design—all genotypes (or their trait-relevant components) measured against all environments (or their trait-relevant components). Few, if any, behavioral studies have been so thorough, and certainly not any human studies.
>
> Only when we consider the number of possible genotypes and the number of potential environments that may influence trait expression do we begin to realize how narrowly limited is the range of applicability for any obtained heritability measure. (pp. 42–43)

One further aspect of the heritability question merits consideration here. This concerns the possible interactions between genotype and environment.

In determining the heritability of IQ, Jensen includes an estimate of the interaction of genetic and environmental factors but indicates that the contribution this interaction makes to the overall variability among IQ scores is rather insignificant.

Goldstein [8] cautions however that such interactive effects need not always be insignificant, and points to recent advances in medical science to indicate the dramatic interactive effects that environments can exert on genetically determined physical disorders:

> The discovery of insulin, the isolation of vitamin D, the production of tuberculostatic drugs, the uncovering and control of phenylketonuria are all those exceptional environmental changes which will make this interaction term significant. They indicate that environments everywhere are not merely supportive of hereditary potentialities, but can, at times, reverse deleterious effects. The great achievements of mankind lie in making that interaction term significant. Indeed it could almost be a maxim for schools of education, psychology, public health and medicine: "Make that interaction significant." (p. 20)

Perhaps then Jensen may be too pessimistic in suggesting that differences in IQ if genetically determined will not be minimized via manipulations of the environment.

Another issue concerning ethnicity and genetics around which confusion seems to persist in all of these works is the interchangeable use of the same ethnic group labels to refer to biological race as well as to social race. Fried sheds interesting light on this issue. According to Fried,[7] the humanistic intentions of most investigators who have studied intelligence, ability, or achievement endowment among different races do not alter the fact that their studies have invariably been based on racial constructs that are destructive and antisocial, in addition to being unscientific. In almost all studies the so-called racial background of individual respondents and respondent populations has been derived in ways that show no resemblance to means used by genetic specialists. In those few cases where any information is given about criteria of assortment, one usually finds that skin color has been the sole or dominant criterion, and that as measured by the eye. In other words, the actual genetic background of the subjects is uncontrolled. The classic study by Shuey [20] on the testing of Negro intelligence illustrates the racist implications of investigations conceived in this mode. In fact, there is as yet no study on a so-called racial sample that adequately links intelligence, potential ability, educability, or even achievement to a specifiable set of genetic coordinates associated with an aggregate larger than a family line or perhaps lineage.

The most useful studies linking race and certain specified socially valued traits make no pretense of dealing with biogenetic race: rather, they openly work with categories of "social race." A case in point is the massive survey by Coleman,[3] which focused on psychological reactions of being identified and identifying oneself as a Negro in the United States. If race is to be treated as a sociocultural construct, it is important to get the individual's views on his own identification and the identification he applies to others. However, if race is to be treated as a biological construct, the lay individual's views of his own racial identity or that of anyone else are unqualified and immaterial.

In September 1971 an article appeared in *The Atlantic* magazine, titled simply, "IQ," under the authorship of Richard Herrnstein,[9] professor of psychology at Harvard University. In his extremely readable article, Professor Herrnstein describes the gropings of philosophers and scientists for a reasonable definition of the concept of intelligence and for ways of measuring this attribute. The triumph scored by Binet in Paris in developing the first usable intelligence test, and the subsequent rapid spread of the techniques and instruments throughout the Western world, are described. The author deals with many of the problems often encountered in discussions of intelligence and its measurement. In treating the controversy surrounding the nature of intelligence he concludes:

> Even at best, however, data and analysis can take us only so far in saying what intelligence is. At some point, it becomes a matter of definition . . . at the bottom subjective judgement must decide what we want the measure of intelligence to measure.

With regard to the predictive validity of IQ scores, Herrnstein is also careful to indicate the cautions that must be observed both in dealing with evidence derived correlationally, and also the other factors that

must be taken into account as contributing to, say, school success or other outcomes. Some minimum IQ, Herrnstein argues, seems to be prerequisite for a large number of successes, but it is never the sole requirement for any practical endeavor.

In his treatment of the observed IQ score differences between social classes, Herrnstein writes:

> It is one thing to note the correlation between social class and IQ but something else to explain, or even interpret it. . . . Since a family's social standing depends partly on the breadwinner's livelihood, there might be further correlation between IQ and occupation.

Further support for the high predictive power of IQ scores is drawn from Terman's Genetic Studies of Genius. In this study, a sample of over 1,500 California children with an average IQ of around 150 was followed over the course of some 30 years. High IQ was found to correlate with a host of factors, including amount of schooling, high status occupations, and high income. To put it in Herrnstein's words:

> An IQ test can be given in an hour or two to a child and from this infinitesimally small sample of his output, deeply important predictions follow—about schoolwork, occupation, income, satisfaction with life and even life expectancy.

"This infinitesimally small sample" of output does indeed seem to be extremely powerful. What is its source? Why do some people have more than others and can we manipulate the quantities within individuals? Herrnstein addresses himself to these questions indirectly by going into a considerably detailed discussion of Jensen's work on the heritability of intelligence, particularly the methods and the studies from which the heritability was obtained. He concludes that little doubt exists regarding the 80% genetic contribution to intelligence that Jensen found among North American and Western European whites. Concerning whether the differences found between the average IQs of whites and blacks in the United States is of genetic origin, Herrnstein believes that a neutral commentator would have to concede that, given the present state of knowledge, the case is not settled. In subsequent discussions, the author does not deal with racial differences but applies the 80% heritability estimate to the total US population and speculates on the possible social and political implications of the heritability of IQ differences as it applies to different social classes.

Given the possibility that differences in mental abilities are inherited, that success requires these abilities, and that earnings and prestige depend upon success, Herrnstein considers the possibility that the heritability of intelligence may tend to increase the stratification of society, precipitating, as he puts it, "a low-capacity (intellectually and otherwise) residue . . . most likely to be born to parents who have similarly failed." Such a situation is almost bound to arise where the environment presents less obstacles to the development of intelligence, thus increasing its heritability, and where social mobility becomes more possible as traditional barriers are toppled. In effect, then, "by removing arbitrary barriers between classes, society has encouraged the creation of biological barriers." This holds equally well for IQ as for the other traits that might contribute to success.

In Herrnstein's view, the course is well set. Attempts to invert or equalize the income structure as it presently exists are futile since these would merely create a channelling of high intelligence individuals into the now newly "desirable" occupations on the one hand, or introduce the peril of critical shortages in professions that are crucial to the conduct of society and require high intelligence. Herrnstein asks what is to be the lot of those who are "unable to master the common occupations and cannot compete for success and achievement?"

The question of unequal distribution of the resources of society, which Herrnstein sees as being largely determined by the unequal distribution of IQ, is again brought into focus by Jencks,[11] in his book, *Inequality*. Here Jencks attempts to demonstrate, based on his reanalysis of a variety of secondary data, that the process of schooling has little effect upon the way in which income is distributed in the society.

The author's basic concern is to demonstrate that if society really is concerned with the equalization of income or economic status, it must go about it more or less directly rather than by attempting to do so by manipulating marginal institutions such as schools.

Considering the variety of factors that might contribute to differences in occupational statuses of males, Jencks concludes that, at the most, such factors as amount of schooling, family background and test scores, account for only about one half. The other 50% of the variation must be accounted for by factors other than those commonly considered to be most important or perhaps those for which we have no measures.

These "other factors" are merely guessed at by Jencks. He suggests that personality variables and luck may play a part in determining occupational status. A consideration of the other possible determinants of success is also relevant to the argument presented by Herrnstein, for although he suggests that IQ is the paramount determinant of occupational status he recognizes that:

> . . . there may be other inherited traits that differ among people and contribute to their success in life. . . . The meritocracy concerns not just inherited intelligence, but all inherited traits affecting success, whether or not we know of their importance or have tests to gauge them.

In order for Herrnstein's hypothesized caste system to evolve, it would be first necessary for the other traits contributing to success to be heritable. Secondly they should be correlated with IQ within each individual and preferably increase in heritability at about the same rate as IQ. The likelihood of this seems rather remote. If Jencks's analysis is reasonably accurate, it appears that at the present time substantial numbers of individuals who have similar test scores, family background, and schooling, will find themselves in occupations that are unequal in status, thus ensuring some amount of crossbreeding between individuals having different intellectual abilities.

But let us return to the problems of education and the value of schooling. The data of the several studies that Jencks and his associates have reanalyzed use intelligence and achievement tests scores as their primary indicators of competence. None of these studies is concerned with happiness and social usefulness as outcome dimensions. Jencks acknowledges some of the limitations of intelligence and achievement testing and dismisses the affective domain with a four-page chapter in which he concedes that he knows little about this area and has not given attention to it in his reanalysis. Now there are several problems here.

1. There is no question but that if we look at intelligence and achievement test scores for large numbers of pupils and try to relate them to the characteristics of schools as we usually measure them, we find little variation that can be attributed to the impact of differences in the quality of schooling. This was one of the major findings from the Coleman study.[3] However, even Jencks concedes that Coleman's findings and the other available data did not include assessments of teacher-pupil and pupil-pupil interaction. These and other interactions we call process variables probably make for differences when status variables such as number of books, age of building, and expenditure per pupil do not. Additionally, since Jencks was looking for gross effects, one of Coleman's findings probably seems less important to him. Coleman reported that, for the most disadvantaged children and for black children, quality of school does make a difference in terms of achievement. In other words, differences in the quality and quantity of schooling in the USA seem to make little difference in your achievement scores unless you are poor or black. If you are both, it seems that schooling might make a powerful difference in your scores and your life chances.

2. Many educators believe that teaching and learning transactions deeply involve the affective (emotional) domain—one's feelings, sense of happiness, satisfaction, purpose, belonging, etc. It is these variables that are hardest to measure and are usually omitted from these studies either as inputs or outcomes. In fact, from the Coleman data, we see that a little measure, crudely conducted, of sense of power or environmental control, was more power-

fully associated with achievement than any other variable studied save family background. Jencks did not study the affective and process variables, as input or output of the schools.

3. There appears to be considerable confounding or contaminating of data in the kind of analysis Jencks has used to arrive at the conclusion that schooling makes little difference. He concludes, for instance, that if "all elementary schools were equally effective, cognitive inequality among sixth graders would decline less than 3 percent." Now the data upon which this estimate is arrived at are the same data that reflect the problems referred to earlier. In addition, Jencks uses the term "equally effective." It would be interesting to know what direction his argument would take if we used my term, *maximally effective*. Schooling as a part of the process by which we facilitate development in our children must —though it never has—define its goals in terms of maximal effectiveness. This involves us in the process of predicting not what will happen if the child and the school continue to function at their present levels, but what happens if we put the two in orbit and free them from the restraints that probably are limiting both.

We must remember that Jencks was not concerned with what schooling can do to develop people, he was particularly concerned with what schooling can do to increase and equalize economic status. These are related but quite different processes. It is to the process of human development and learning that I have devoted my professional career. An examination of some of the factors that may complicate those processes in low-income and minority groups may help us to put into proper perspective the conflicting opinions we hear concerning the influence of schooling.

For almost 25 years, hanging near my desk has been a print of a beautiful Thomas Hart Benton drawing, which he aptly titled, "Instruction." This sensitive drawing shows an old black man, with his tattered books, papers, clothing, and surroundings, working at the task of helping a young black child to learn. It symbolizes an endeavor to which a host of persons, before and after this simple soul, have devoted their efforts—some enthusiastically and with skill, others reluctantly and with incompetence. Would that the problems of teaching and learning were as simple as the spirit Benton captures in this drawing. Too many black children fail to master the traditional learning tasks of schooling. Too many Puerto Rican, Chicano, and Native American (American Indian) children are failed in our schools. Children from minority groups and low income families are overrepresented among our schools' failures. Why?

The problems involved in the equalization of educational achievement patterns across economic and ethnic groups continue to defy solution. The attempts at describing, evaluating, and interpreting these problems and the efforts directed at their solution are frequently confusing. Over the past several years a variety of special programs have been developed to improve the educational achievement of disadvantaged children. These programs have spanned a range from preschool through college; their special emphases have included special guidance services to experimental curriculums; they have grown from a few special efforts in the great cities to nation-wide, federally sponsored programs supported by the Office of Economic Opportunity and the Office of Education under the Elementary and Secondary Education Act. Thousands of special programs have been spawned. Ten billion and more dollars have been spent over the past several years. Yet despite all of this activity, there is little evidence to suggest that we have come close to solving the problems of educating large numbers of ethnic minority group and poor white children.

The relative lack of success of these efforts at upgrading academic achievement in the target populations has resulted in some criticizing of the educational services provided, but has also resulted in a renewal of old arguments in support of the exploration of differences in the level of intellectual function across ethnic groups based on alleged inferior genetic traits in lower status groups. Neither of the simplistic approaches to understanding the problems or fixing the blame for our failure

to make school achievement independent of ethnic or social class is adequate.

The problems of educating black and other disadvantaged populations who have been accidentally or deliberately, but always, systematically deprived of the opportunity for optimal development is far more complex. The problem of equalizing educational achievement across groups with differential economic, political, and social status may confront us with contradictions that defy resolution. Adequate understanding and appropriate planning for an attack upon these problems will require that attention be directed to several issues. Among these are: 1) the problems related to differential patterns of intellectual and social function, as well as varying degrees of readiness in multivariant populations served by schools whose programs are too narrowly conceived and too inflexible to provide the variety of conditions for learning dictated by the characteristics of the children served; 2) the problems related to the conditions of children's bodies and the conditions of their lives that may render them incapable of optimal development and that may seriously interfere with adequate function; 3) the problems related to ethnic, cultural and political incongruencies between the schools and their staffs on the one hand, and the children and communities served on the other; and 4) the problems related to the public schools as social institutions that have never been required to assume responsibility for their failures and thus become accountable to the society and its specific members whom they serve.

DIFFERENTIAL CHARACTERISTICS AND DIFFERENTIAL TREATMENTS

Despite the long history in education of concern with meeting the special needs of individual children and the highly respected status of differential psychology as a field of study, schools have made little progress in achieving a match between the developmental patterns, learning styles, and temperamental traits of learners and the educational experiences to which they are exposed. A great deal of attention has been given to differences in level of intellectual function. This is reflected in the heavy emphasis on intelligence testing and the placement, even "tracking" of pupils based on these tests. This tradition has emphasized quantitative measurement, classification, and prediction to the neglect of qualitative measurement, description, and prescription. These latter processes are clearly essential to the effective teaching of children who come to the schools with characteristics different from those of their teachers and the children with whom most teachers are accustomed. Our research data indicate wide variations in patterns of intellectual and social function across and within subpopulations. These variations in function within privileged populations may be less important because of a variety of environmental factors that support adequate development and learning. Among disadvantaged populations, where traditional forms of environmental support may be absent, attention to differential learning patterns may be crucial to adequate development.

Some workers in the field have given considerable attention to differential patterns of language structure and usage. For example, importance has been attached to "black English" or the dialects of black peoples as possibly contributing to low academic achievement. These indigenous language forms are viewed by some as obstacles to be overcome. Others view them as behavioral phenomena to be utilized in learning. Workers holding the former position stress the teaching of "standard English" or English as a second language. Those holding the latter view emphasize the adaptation of learning experiences and materials to the indigenous language of the child. The debate is probably not important except as it may reflect respect or lack of respect for the language behavior of the learner. What may be more important than the fact of language difference is the role that language behavior plays in the learning behavior of the specific child. To understand and utilize that relationship in the education of the child requires more than teaching him how to translate "black English" into standard

English and requires more than making him a more proficient utilizer of the indigenous language.

Understanding the role of one set of behaviors as facilitators of more comprehensive behaviors is at the heart of differential analysis of learner characteristics and differential design of learning experiences. Schooling for black children, indeed for all children in our schools, comes nowhere near to meeting these implied criteria. Assessment technology has not seriously engaged the problem. Curriculum specialists are just beginning to, in some of the work in individually prescribed learning.

LIFE CONDITIONS: HEALTH, NUTRITION, AND LEARNING

Contemporary research provides evidence of a variety of behaviors and conditions that are encountered in children from economically disadvantaged backgrounds with sufficient frequency to justify the conclusion that they are either induced by or nurtured by conditions of poverty. The excellent studies by Knobloch and Pasamanick [14, 18] of the relationships between health status and school adjustment in low-income Negro children in Baltimore, by Lashof [15] of health status and services in Chicago's South Side, and by Birch [1] of the health status of children from indigent families in the Caribbean area, provide mounting evidence in support of the hypothesis that there exists a continuum of reproductive errors and developmental defects significantly influenced by level of income. According to this hypothesis, the incidence of reproductive error or developmental defect occurs along a continuum in which the incidence of error or defect is greatest in the population for which medical, nutritional, and child care are poorest and the incidence least where such care is best.

These studies point clearly to the facts that: 1) nutritional resources for the mother-to-be, the pregnant mother and fetus, and the child she bears are inadequate; 2) medical care—prenatal, obstetrical, and postnatal—is generally poor; 3) the incidence of subtle to more severe neurologic defects is relatively high in low-income children; 4) case finding, lacking systematic procedures, is hit or miss, leaving the child not only handicapped by the disorder but frequently with no official awareness that the condition exists; and 5) family resources and sophistication are insufficient to provide the remedial or compensatory supports that can spell the difference between handicap and competent function.

These health-related conditions are thought to have important implications for school and general social adjustment. We know that impaired health or organic dysfunction influences school attendance, learning efficiency, developmental rate, personality development, etc. Pasamanick [17] attributes a substantial portion of the behavior disorders noted in this population to the high incidence of subtle neurologic disorders. Several authors relate a variety of specific learning disabilities to mild to severe neurologic abnormalities in children. Clearly, adequacy of health status and adequacy of health care in our society are influenced by adequacy of income, leading to the obvious conclusion that poverty results in a number of conditions directly referrable to health and indirectly to development in general, including educational development.

CULTURAL, ETHNIC, AND POLITICAL INCONGRUENCIES

Ethnic and economic integration in education appeared for a brief while to be a possible solution to underachievement in lower-status children. The data seem to indicate that academic achievement for black children improves when they are educated in middle-class and predominantly white schools. It is not at all clear that ethnic mix makes the difference. However, the evidence overwhelmingly supports an association between separation by economic group and school achievement with low economic status being associated with low school achievement. Consistently, poor children attending school in poor neighborhoods tend to show low level school achievement.

Before-and-after studies of desegregated schools have also tended to show that achievement levels rise with desegregation, although the exact interplay of reactions leading to this result has not yet been conclusively defined. For example, the process of desegregation may, by improving teacher morale or bringing about other changed conditions, result in an overall increase in the quality of education throughout the system. There have been a number of studies examining the possible relationship of integration (along racial or status group lines) and achievement, and the overall results of these efforts appear to demonstrate that children from lower-status groups attending schools where pupils from higher-status families are in the majority attain improved achievement level, with no significant lowering of achievement for the higher-status group. However when children from higher-status groups are in the minority in the school, there tends not to be an improvement in the achievement of the lower-status group.

Although these findings are generally supported in mass data compiled from large-scale populations, studies of minority group performance under experimental conditions of ethnic mix suggest a need for caution in making similar observations for smaller populations and individual cases. From these findings it becomes clear that the impact of assigned status and perceived conditions of comparison (that is, the subjects' awareness of the norms against which their data will be evaluated) results in a quite varied pattern of performance on the part of the lower status group subjects. Thus, it may be dangerous to generalize that across-the-board economic ethnic and social class integration will automatically result in positive improvement for the lower-status group.

To further complicate the picture, a new renaissance in cultural nationalism among all disadvantaged ethnic minorities has brought into question our assumptions concerning ethnic integration and education. In a society that has alternately pushed ethnic separation or ethnic amalgamation and that has never truly accepted cultural and ethnic pluralism as its model, blacks, Chicanos, Puerto Ricans, and Native Americans are insisting that the traditional public school is guilty not only of intellectual and social but of cultural genocide of their children. For many members of these groups the problem in education for blacks is that they have been subjected to white education, which they see as destructive to black people. When one views this argument in the context of the current stage in the development of craft unionism in education, the position cannot be ignored. The conditions and status of professional workers in education are justly the concern of their unions but blacks increasingly view the union concern as being in conflict with their concern for their children's development. That in New York City the workers are predominantly white makes it easy for the conflict to be viewed as ethnic in origin unless one looks at the situation in Washington, D.C., where Negroes are heavily represented in the educational staff, but some of the problems between professionals and clients are no less present.

There are class and caste conflicts to which insufficient attention has been given in the organization and delivery of educational services. If cultural and ethnic identification are important components of the learning experience, to ignore or demean them is poor education. If curriculum and delivery systems do not take these factors into account, inefficient learning may be the result. One would hope that black education by black educators is not the only solution, yet we are being pressed to no longer ignore it as a possible solution.

Would that the problems ended even there. It may well be that what has surfaced as cultural nationalism may be only the wave crest of a more important issue. Public schools as social institutions have never been required to assume responsibility for their failures. They, nonetheless, eagerly accept credit for the successes of their students. This may be related in part to the functions that schools serve in modern societies. The noted anthropologist, Anthony Wallace,[22] has discussed the differential attention given to training in technique or skills education for morality, and the development of intellect in societies that are revolutionary, conservative, or reactionary. For more than one hundred

years the United States has been a conservative society—liberal in its traditions but essentially conservative in its functions. Some of us fear that that conservatism has given way to a reactionary stance. According to Wallace, the conservative society places highest emphasis on training in techniques and skills, with secondary attention to morality (correct behavior), and least attention to the development of the intellect. Societies in the reactionary phase place greatest emphasis on morality (now defined as law and order), second emphasis on techniques and skills, and only slight or no attention to the development of intellect. He sees society in its revolutionary phase as placing greatest emphasis on morality (humanistic concerns), with second-level interest on the development of intellect, and the least attention given to training in technique. Schools may not have developed a tradition of accountability because techniques and skills may be the least difficult of the learning tasks to master, if the conditions for learning are right. For large numbers of children who have progressed in the mastery of technique, their status in the society has facilitated technique mastery. Those who have not mastered the skills, our society has been able to absorb into low-skill work and non-demanding life situations. But by the mid 20th Century, entry into the labor force and participation in the affairs of the society increasingly require skills and techniques mastery. Those who would move toward meaningful participation and the assertion of power are increasingly demanding that the schools be accountable not only for pupils' mastery of skills, but also for the nurturance of morality and the development of intellectuality. In fact, with the rapidly increasing demand for adaptability and trainability in those who are to advance in the labor force, DuBois's[5] concern with the liberating arts and sciences (the development of intellect) moves to the fore. Yet we must remember that the schools are at present instruments of a conservative (possibly reactionary) society, but blacks, other minority groups, and poor people increasingly see revolution (radical change) as the only ultimate solution to the problems and conditions in which their lives are maintained. As such, their concern with schooling may more sharply focus on issues related to morality and intellectual development, broadly defined—concerns that the schools have never been competent to meet. If circumstance has converted these concerns to educational needs, the schools then, in their present form, are ill prepared to educate these young people whose ideals and goals should be revolutionary, not conservative, and certainly not reactionary.

But this does not mean that schooling cannot be effective in the development of young people. To insure that our schools effectively educate is one of our tasks. To reduce or eliminate economic inequality is a related but separate task. It is from the accidental or deliberate confusing of these tasks, along with the distortion of the meaning of possible genetically based differences in the intellectual functioning of ethnic groups, that the threat to adequate support for educational and other human welfare programs is perceived. Jencks is correct, we do not equalize income by making schooling equally available or equally effective for all people. We equalize income, if that is our goal, by redistributing income and by eliminating the opportunity to exploit the wealth producing labor of others and to hoard capital. But that does not mean that there are not good reasons for a democratic and humane society to make schooling equally available and optimally effective for all people. Similarly, Jensen is correct. People do differ individually and by groups (races, if you will). It is quite likely that his assertion that groups of people differ with respect to qualitative aspects of intellectual function will find further support. Even before Jensen's work gained prominence, Lesser,[16] Zigler,[21] and others were reporting data and advancing postulates indicating ethnic group and social class differences in the character of intellectual function. That genetic factors influence mental function and in part account for individual and group differences does not mean that schooling and other environmental conditions have no effect, nor does it mean that these differences are not useful. Rather, the fact of difference, no matter what the

source, in the interest of human development requires *diversity* of facilitative treatments and *sufficiency* of the resources to deliver them.

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